OREGON STATE UNIVERSITY EXTENSION SERVICE

CEREAL Newsletter

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2010 Variety Drill Strip Trial Results

Legion, ORCF 102 and Stephens came out as top yielders in this year's Umatilla County Variety Drill Strip Trial. Goetze came out at the bottom of the list even in the blend with Skiles as Skiles was also near the bottom this year. Goetze has the potential for winter injury and that is the most likely culprit for this year's low performance as stripe rust was not a problem for the variety.

Legion, an AgriPro tall semi dwarf variety release in 2008, was the top yielder this year. It has medium maturity and good straw strength. This is the first year I have had Legion in the drill strip trials and so I have little experience with it, but literature describes it as a variety suitable for higher production areas of Washington and northeastern Oregon. It had very little stripe rust present when we evaluated the trial on June 25th.

Tubbs 06, which has been a good performer at this site, dropped due to a high incidence of stripe rust and the lack of effectiveness of high-temperature adult-plant resistance (HTAP). The failure of warm temperatures to materialize this past spring played havoc on varieties like Tubbs that are dependent on HTAP. For additional information and pictures on the level of stripe rust in the trial, I have posted a PDF on www.cerealcentral.com that shows strip rust pictures and stripe rust severity ratings of each variety in the trial. ORCF 101, and ORCF 102 along with Stephens continued to be strong performers even under these unusual conditions.

As you plan your seeding activities this fall, remember that season-to-season variations in weather and the lack of an effective crystal ball, make variety selection challenging. I recommend looking over the variety information that I have included in the newsletter, and adding this year's result into the mix, recognizing that this past spring we were setting or nearly setting new records for rainfall and low temperatures.

Jacob and Michael Hales assist in drill strip trial harvest 2010.

An option is to use mixes of two varieties as a means of minimizing the risks, or one could planting different fields to different varieties to spread the risk.

Additional variety trial information from across Oregon and Washington are available on my website, and they will be updated as soon as new or revised information becomes available. My variety drill strip trial is a demonstration and as such, gives us an opportunity to see newer varieties under field growing conditions on a larger scale that the typical small plot research trials. It is only one strip per variety and is not replicated. *-MKC*

Annoucements

Save the DATE for the 2010 Columbia Basin Cereal Seminar and Sustainable Ag Forum

DATE: December 14, 2010

LOCATION: OSU Extension Conference Room, Umatilla Hall, Blue Mountain Community College, Pendleton, Oregon

Co-sponsored by: OSU Extension, Umatilla County Soil & Water Conservation District and Columbia Blue Mountain Resource Conservation & Development

The Umatilla County Soil & Water Conservation District is offering TWO Incentive Programs to Area Growers

The Umatilla County Soil and Water Conservation District (SWCD) is taking applications for the Variable Rate Fertilizer Application & Direct Seed Incentive Programs!

If you're plan on using a variable rate fertilizer applicator or you would like to try this technology, you are eligible for the incentive program (cost-share of $20 per acre for up to 200 acres per producer).

If you would like to try direct seeding or convert conventional tillage acres to direct seeding OR you have expired CRP ground that you would like to direct seed, then this is the program for you! The cost-share is $10 per acre up to 1,000 acres per producer.

For more information, stop by the office or call Heidi at 541-276-8131.

The Umatilla SWCD is located in the old John Murray building at 200 SE Hailey Ave Suite 108 in Pendleton.

The Umatilla County Soil & Water Conservation District is looking for potential projects

The Umatilla County Soil and Water Conservation District is looking for 65 potential grant projects for on-the-ground restoration projects that approach natural resources management from a whole-watershed perspective. Example projects include: streambank plantings, off-stream livestock watering facilities or fencing stream areas to restore riparian function, weed control, native plant reseeding, restoring or enhancing natural wetlands, improving fish habitat, culvert removal or replacement.

Interested landowners should contact the Umatilla County SWCD at 541-276-8131 for additional information and technical assistance.

Umatilla County
Soil and Water Conservation District

2010 Umatilla County Drill Strip Variety Trial*

Variety	Yield (bu/a)	Moisture (%)	Protein (%)	Starch (%)	Test Wt (lb/bu)	Stripe Rust[1]
Legion	91.3	8.5%	9.0%	58.7%	58.1	7
ORCF 102	88.9	8.5%	9.0%	58.3%	59.6	30
Stephens	86.5	8.6%	9.3%	58.9%	59.1	13
ORCF 101	80.4	8.3%	9.3%	58.2%	59.8	18
Tubbs 06	76.4	8.5%	9.1%	58.4%	58.2	40
Goetze/WB 528	74.2	8.7%	9.1%	58.4%	60.2	--
Skiles	70.9	8.5%	9.3%	57.8%	60.5	8
Goetze	68.4	8.9%	9.4%	58.0%	58.6	7
Goetze/Skiles	67.7	8.5%	9.4%	57.9%	60.1	--
Average	78.3	8.6%	9.2%	58.3%	59.4	

*Location: Hales Farms, Midway Elevator, planted October 10, 2009
Field Notes: Stripe rust issues were similar to surrounding fields, field was treated with fungicide late in season following our evaluation.
1. Stripe rust evaluation conducted on June 25, 2010. Rated as a percent of flag leaf infected.

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3 Year Umatilla County Drill Strip Variety Trial Summary*

	2010	2009	2008
Variety	**Yield** (bu/a)	**Yield** (bu/a)	**Yield** (bu/a)
Legion	91.3	--	--
ORCF 102	88.9	88.5	79.0
Stephens	86.5	88.7	86.2
ORCF 101	80.4	89.0	80.1
Tubbs 06	76.4	94.0	86.4
Goetze/WB 926	74.2	--	--
Skiles	70.9	93.2	82.2
Goetze	68.4	93.8	96.0
Goetze/Skiles	67.7		
Average	78.3	91.2	85.0

* Three year summary, Hales Farms

Conservation Reserve Program: Evaluating your choices

The Conservation Reserve Program began in 1985 and many acres in Umatilla County have been enrolled over the years. Many CRP contracts are set to expire in the next 7 years in our county. The majority of CRP contracts begin and expire based on the federal government's fiscal year of October 1st through September 30th. Contracted acres can be "worked" 90 days prior to the contract expiration date. For additional information, check with our local Farm Service Agency office.

Land owners and mangers have a number of alternatives to consider as they plan for the future, a future where renewing the contract may not be an option.

Some options are:

- Conversion back to cropland
- Conversion to grazing
- Preserving wildlife habitat
- Continue perennial plant cover.

Each option has its own set of considerations: costs, benefits, risks and potential ramifications. If land is returned to crop production for a commodity crop and one plans to participate in government programs, a conservation compliance plan approved by local NRCS field office is required. Other compliance plans such as a grazing plan may also be involved, so planning ahead and gaining advice from many technical advisors is my advice.

If crop production is the choice for some of the higher production areas of the fields, remember that the organic matter gained over the past 10-20 years can positively contribute to the production system. Direct seed drills, depending on the type, can be used effectively in high residue environments. The use of an reduced tillage system utilizing an undercutter has also been shown to be an effective conservation system.

The "right" choices for your situation can only be made by you and your closest advisors, but remember that there are Extension agronomists, and researchers that are available over the coming months to help provide information about the newest methods and practices for your farming operations. In addition, we will be covering this topic in more depth during our Cereal Seminar on December 14, 2010.

One Tillage Pass Can Produce Highly Effective Tilled Summer Fallow

Stewart B. Wuest, William F. Schillinger, and Mary K. Corp *(excerpts from 2010 CBARC Annual Report)*

Our research focus is on millions of acres in the driest portions of the Inland Pacific Northwest where tilled fallow is generally considered necessary for profitable winter wheat production. Some data presented here are from completed, published research projects and the rest from recent data not yet published. The ideas and principles are a work-in-progress, but the evidence and conclusions are sound enough and important enough to begin an earnest discussion.

Tillage-based fallow generally retains adequate seed-zone moisture for early (late August – early September) establishment of winter wheat, whereas sufficient seed-zone moisture is generally not present in no-till fallow by late summer. Yet, historically, tillage has led to wind -related soil erosion.

While "trashy" fallow systems (leaving 30% cover or more) have reduced wind erosion, growers often have difficulty passing through high amounts of surface residue with existing deep-furrow drills. Still many people believe a "dust" mulch, ie. multiple tillage operations, is needed to provide a barrier to stop moisture loss during the summer months prior to seeding. A growing body of research has demonstrated that this is not true.

Extensive experiments at Lind, WA in the 1990s on a Shano-Ritzville soil (Schillinger, 2001) showed that undercutting with large V-bladed sweeps, plus nitrogen injection to a depth of five inches in the spring followed by rodweeding as needed provided a tillage mulch that consistently retained: (i) 30% surface residue cover, (ii) more

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surface clods, and (iii) more clods within the tillage mulch compared to traditional tillage. There were never any differences in seed-zone moisture or subsequent winter wheat grain yield between the undercutter tillage and traditional tillage systems.

A recent study conducted at Lind and at Moro, OR established that a single, low disturbance undercutting operation consistently produced seed-zone moisture and winter wheat yields equivalent to undercutting plus repeated rodweeding operations. The presence of more and larger soil clods both on the soil surface and within the tilled soil mulch did not reduce the insulating effect. In addition, an average of slightly more than 30% residue cover was retained on the surface after seeding with the undercut-only and 1x-rodweeding treatments.

Recently, we have developed unbiased methods for comparing soil moisture on soils with bulk density differences and we found in a rodweeding frequency experiment at Lind that the undercutter without any rodweeding actually performed better than when rodweeded immediately after undercutting, or rodweeded later in the season, or rodweeded several times. In this experiment weeds were controlled by herbicides in the undercut only treatment, so we are examining the effect of the soil mulch without consideration of how to control weeds. In August 2006 the improvement was substantial. In August 2007 and 2008 the soil was drier in general, but there was still an advantage to less rodweeding.

A set of data where several tillage types can be directly compared using stringent statistical methods comes from an on-farm test near Helix, OR on Newtson Farms. The sweep treatments again had better moisture.

One obstacle to adoption of single-pass summer fallow systems is that it leaves a relatively thick, low-density mulch which can be difficult to seed into with standard deep furrow drills. On the other hand, the soil may hold furrows better as it has less of a tendency to flow. A cloddy, trashy surface will also have less possibility of crusting. Some seedlings are prevented from emerging because they are impeded by a clod, but such stand reductions at Lind has not reduced grain yield compared to traditional tillage. It seems clear from available data that a low bulk density, cloddy, high residue soil mulch reduces evaporation compared to a finer mulch. We don't have a lot of measurements on the effect of single-pass tillage on total water storage, but it appears that the reduction in evaporation improves water storage. This should help with stand establishment and yield potential in marginal years.

Ultimately, we would like to see drills designed to seed into high residue levels and low density, cloddy soils to take full advantage of the benefits of soil water conservation, better seed-zone moisture, and excellent erosion control. Regional farmers and researchers are currently working on developing such a deep-furrow drill.

We know the longer we can delay tillage, the better the penetration of spring rains. No-till allows the best penetration of rain, and we recommend no-till over tilled fallow wherever timely rains allow good winter wheat establishment. We do have some indications however, that single-pass tillage fallow has much better rain penetration than more intensely tilled fallow, which has very poor penetration.

Despite questions regarding mid-summer weed control and a design for more suitable seed drills, the prospects of a very low disturbance, erosion resistant summer fallow system with excellent seed-zone moisture and water conservation make further efforts in the driest winter wheat regions imperative. A more accurate understanding of the physics of tilled mulches promises to improve both profitability and sustainability while conserving our irreplaceable resource – the soil.

For a more detailed report on the potential for one pass tilled summer fallow go to: "One Tillage Pass Can Produce Highly Effective Tilled Summer Fallow," CBARC Annual Report, 2010. http://cbarc.aes.oregonstate.edu/dryland-research-report-2010-0

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CALENDAR

September, October, November, December

Sept 16 — **OWGL Statewide Marketing Meeting**
Location: OSU Extension Conference Room, Pendleton, OR
Contact: OWGL 541-276-7330

Oct. 19 — **OWGL Board & Committee Meetings**
Location: Madras, OR
Contact: OWGL 541-276-7330

Nov. 1-3 — **Agronomy Society of America Conference**
Location: Long Beach, CA
Contact: www.acsmeetings.org

Dec. 1-3 — **Oregon/Idaho Grains Conference**
Location: Doubletree Lloyd Center, Portland, OR
Contact: OWGL 541-276-7330

Dec. 1-3 — **Hermiston Farm Fair and Trade Show**
Location: Conference Center, Hermiston, OR
Contact: Chamber of Commerce 541-567-6151

Dec. 14 — **Cereal Seminar & Sustainable Ag Forum**
Location: OSU Extension Conference Room, Pendleton, OR
Contact: Mary Corp 541-278-5403

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